

### REMARKS

Independent claims 1 and 12 are clarified to specify heating the applied powder coating to less than 1000°C, wherein the heating to less than 1000°C melts and fuses particles of the powder coating to the gas turbine engine component solid surface and cures the powder coating (Emphasis added). These claims also are clarified to specify that the heating and coating is performed in less than 15 minutes (Emphasis added). Support for the foregoing clarification exists throughout the specification at, for example, page 10-12. Claims 14 and 19-20 are canceled. No new matter is introduced into the application.

In the outstanding Office Action, claims 21-24 are withdrawn by the Examiner as being directed to a non-elected invention. Applicants respectfully request the Examiner to reconsider and withdraw this restriction as it is believed that search and examination of all claims in a single application would not present a serious burden on the Examiner. Accordingly, such favorable action is earnestly solicited.

At page 3 of the Action, the Examiner rejects claims 1-2, 4-9, 11-12, 14 and 17-20 under 35 USC § 112, first paragraph, as allegedly lacking support for the words "heating to only one temperature." Applicants respectfully disagree with the Examiner's rejection. However, these words have been deleted from the claims in the interest of advancing the prosecution of the subject application.

The Examiner also rejects claims 1 and 17-18 under 35 USC Section 102(b) as being anticipated by or, in the alternative, under 35 USC Section 103(a) as being obvious over US Patent 5,250,360 to Andrus et al. Similarly, the Examiner rejects claims 11-12 and 14 under 35 USC Section 103(a) as being unpatentable over Andrus et al., and claims 2 and 4-9 under 35 USC Section 103(a) as being obvious over Andrus et al. in view of US 2004/0068027 to Daly et al. or U 2004/0063817 to Ilenda et al.

The above rejections are respectfully disagreed with, and are traversed below.

Andrus et al. relate to a specific composition comprising a barium silicate or strontium silicate glass-ceramic material.

At column 6, Andrus et al. describe that its glass powder-coated metal body is 1) heated to a temperature below 1000°C to soften the glass particles and produce a dense, smooth, continuous glass coating that is essentially free from crystallization. The glass coated body is then heated to a 2) somewhat higher temperature to effect development of a crystal phase which forms a dense, strong, refractory, crystalline coating. "A key feature of this procedure is the ability to control the timing of crystallization, and thus the reproducibility of the coating process." Thus, the second, higher temperature effects development of the crystal phase and cures the coating and Andrus et al. appear to describe the criticality of forming the crystalline coating in this manner.

As recognized by the Examiner at page 4 of the Action: "Andrus teaches the applied coating is fired at a temperature above 1000°C causing the glass and ceramic to react to react to form a fused and cured crystalline coating (col. 6, ln. 37-47)." Thus, the Examiner appears to recognize that Andrus et al. cure their coating above 1000°C after heating to a lower temperature in order to achieve their desired result.

In contrast, in Applicants' claimed method as set forth in independent claims 1 and 12, Applicants' coating is heated and cured at a temperature below 1000°C. Thus, it is respectfully asserted that Andrus et al. teach away from the subject claims.

Moreover, Andrus et al. disclose in Table III-IV that each of its heat treatments for the applied glasses was one hour (Emphasis added).

In contrast, Applicants' independent claims 1 and 12 specify that the coating and heating are advantageously performed in less than 15 minutes. Thus, it is asserted that Andrus et al. also teach away from this feature of Applicants' claims. There is no indication in Andrus et al. that their described coating could be applied, heat treated and cured in less than 15 minutes,

and result in a high melting point coating on a gas turbine engine component. All of Andrus et al.'s numerous examples even require heating at one hour at temperatures over 1000°C, as noted above. There is no reason to modify the teachings of Andrus et al. in an attempt to arrive at Applicants' independent claims 1 and 12.

Advantageously, as described at page 12 of Applicants' specification, Applicants' powder coating of gas turbine engine components is a fast process in which it is possible to coat and fire a component in less than 15 minutes. Applicants' methods are economical, result in high yields and are environmentally friendly in that no solvents are required. Advantageously, coatings such as thermal barrier coatings, sacrificial coatings, anticorrosion coatings and oxidation resistant coatings may be applied in accordance with embodiments of the invention. Thus, Applicants' have satisfied a need in the gas turbine art and unexpectedly achieved a method capable of heating and coating a component in less than 15 minutes.

In view of the foregoing, the Examiner's rejection of independent claims 1 and 12 based on Andrus et al. should be reconsidered and withdrawn. As these independent claims are believed to be patentable, the remaining dependent claims also are believed to be in condition for allowance at least in view of their dependency from an allowable independent claim.

However, for completion, it is also noted that the addition of Daly et al. and/or Illenda et al. does not cure the shortcomings of Andrus et al. These references were additionally cited by the Examiner in the rejection of dependent claims. In particular, Daly et al. relate to a low gloss powder coating, which is applied to hardwood substrates. Daly et al. do not relate to any method of coating gas turbine engine superalloy components, as claimed herein. The teachings of Daly et al. are not related to Applicants' field of endeavor, or reasonably pertinent to the problem to be solved.

Illenda et al. relate to coatings resistant to damage from stresses caused by sunlight, chemical spills and adverse weather conditions (paragraph 1 of Illenda et al.). As in the case of Daly et al., Illenda et al. do not relate to any method of coating gas turbine engine components, as claimed herein. The articles to be coated by the Illenda et al. coating include, for example,

polyolefin pipes, luggage, automotive parts, prepegs for printed circuit boards (see paragraph 12 of Ilenda et al). As in the case of Daly et al., the teachings of Ilenda et al. are not related to Applicants' field of endeavor, or reasonably pertinent to the problem to be solved. Thus, the skilled artisan would not be motivated to even look to these references for guidance, as these references are believed to be non-analogous.

In view of the foregoing, the Examiner's rejections based upon Andrus et al., Daley et al. and Illenda et al. should be reconsidered and withdrawn.

All issues raised by the Examiner having been addressed, the subject application is believed to be in condition for immediate allowance. No new issues requiring a further search are believed to be raised and thus the Examiner is respectfully requested to enter and consider the subject application, and allow the pending claims. Accordingly, such favorable action is requested.

A call to the undersigned attorney at the telephone number listed below would be sincerely appreciated should the Examiner have any questions or believe a discussion would advance the prosecution of the subject application.

Respectfully submitted:

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